

claim should not be considered as an admission that applicant concurs with the Examiner's conclusion that these dependent claims are not patentable over the disclosure in the cited references. Similarly, applicant's decision not to discuss differences between the prior art and every claim element, or every comment made by the Examiner, should not be considered as an admission that applicant concurs with the Examiner's interpretation and assertions regarding those claims. Indeed, applicant believes that all of the dependent claims patentably distinguish over the references cited. However, a specific traverse of the rejection of each dependent claim is not required, since dependent claims are patentable for at least the same reasons as the independent claims from which the dependent claims ultimately depend.

Clarification of the Basis of Rejection

The Examiner has noted that this rejection is based on 35 U.S.C. § 102, however, the language of the rejection (over Bailey in view of Lacey) appears to suggest the rejection is based on 35 U.S.C. § 103. Clarification is respectfully requested.

Patentability of Independent Claim 24

Significant differences exist between the recited subject matter and the cited art because the cited art does not teach or suggest the details of applicant's support structure, Official Notice in citing method steps is inappropriate to apply to this type of apparatus claim, and Lacey teaches away from making any modification to the adjustment handle such that it resembles applicant's support structure.

As amended, Claim 24 recites a support structure for the video camera that comprises an elongate member (i.e., a boom) and

(ii) *a first adjustable bracket configured to slidably engage the first elongate member, such that an amount of the first elongate member disposed within the practice volume can be increased and decreased as desired;*

(iii) *a second adjustable bracket configured to movably support the first elongate structure, to enable a position of digital video camera coupled to the distal end of the elongate member to be tilted; and*

(iv) *a support member configured to support the second adjustable bracket and to pivotably engage the housing, the support member having a proximal end disposed inside the*

1 *practice volume, to enable a position of digital video camera coupled to the distal end of the elongate*
2 *member to be panned.*

3 The Examiner notes that Lacey discloses trainer including a video camera within a practice
4 volume, where the video camera can be manipulated using a boom that extends beyond the housing.
5 Lacey provides very little structural detail related to the video camera attached to the boom.
6 Significantly, Lacey does not teach or suggest the first adjustable bracket, the second adjustable
7 bracket, or the support member configured support the second bracket and to pivotably engage the
8 housing.

9 While the Examiner has further taken Official Notice that motions such as panning and tilting
10 are well-known in the art, the mere fact that such motions are known does not appear to render all
11 structures facilitating such motions as being within the scope of the prior art.

12 Claim 24 recites in detail a particular structure enabling a range of motions to be achieved.
13 The fact that similar ranges of motions are known in the art does not logically lead to the conclusion
14 that the specific structure recited by applicant is known to the art, or would have been obvious.

15 Support for this amendment is found in FIGURE 4, which is a partial view of the upper
16 portion of the surgical trainer of FIGURE 3, providing a detailed view of the support structure for the
17 digital camera, illustrating how the support structure enables zooming, panning and tilting of the
18 digital camera to be achieved. In addition, the disclosure explains the details of the support structure
19 on page 16, line 12-page 17, line 20. More specifically, applicant has generally included the
20 recitation of dependent claims 25 and 26 in independent Claim 24 and have added additional details
21 of the support structure.

22 Significantly, it would appear that the structure disclosed by Lacey would enable some range
23 of motion to be achieved, even without any modification of Lacey to incorporate structures
24 equivalent to those recited in Claim 24 as amended. Thus, applicant submits that there is no reason to
25 modify Lacey's system with a similar support system. Indeed, it appears that Lacey teaches away
26 from this type of modification, in that Lacey's approach appears to be based on providing a plurality
27 of different cameras, each providing a different viewing angle, as opposed to providing a more
28 complicated structure camera support structure designed to facilitate repositioning a single camera
29 within the practice volume. Lacey discloses in paragraph 0042 how the plurality of cameras are

1 located at different positions to provide a large degree of versatility for location of the instruments
2 and that the locations of the cameras may be different, and that the number of cameras may vary.

3 Accordingly, applicant respectfully requests that the Examiner's rejection of Claims 24 be
4 withdrawn since the cited art does not teach or suggest all of its aspects. Since dependent claims
5 inherently include what is recited in the independent claim on which they depend, Claim 49 is
6 patentable over Bailey in view of Lacey for at least the same reasons as set forth above in connection
7 with Claim 24.

8 Patentability of Independent Claim 50

9 Significant differences exist between the recited subject matter and the cited art because the
10 cited art does not teach or suggest *a support member that pivotally engages the housing AND*
11 *supports a boom* to which the video camera is attached.

12 The Examiner is correct that Lacey discloses a boom to which a video camera is attached.
13 However, Claim 50 further recites:

14 *a support member configured to ~~slidingly~~ pivotally engage the housing, thereby*
15 *enabling digital imaging sensor to be selectively positioned within the practice volume to achieve a*
16 *panning motion, and to positionably support the boom, thereby enabling the digital imaging sensor to*
17 *be further selectively positioned within the practice volume.*

18 Lacey simply does not teach or suggest any structure (other than the housing) for supporting
19 the boom to which the video camera is attached. As Lacey already indicates that the boom enables
20 the camera to be positioned, there appears to be no basis absent the impermissible application of
21 hindsight for modifying Lacey to achieve the recited structure.

22 Notice that applicant's support member, i.e., shaft 64, pivotally engages the housing. The
23 specification explains that shaft 64 moves relative to opening 62 of FIGURE 4. In addition, the
24 support member also supports the boom. However, there is no evidence of any kind of support
25 structure being used to support the boom/adjustment handle in Lacey, other than the housing through
26 which the adjustment handle passes. From FIGURE 2 of Lacey, it appears that the housing is
27 supporting the adjustment handle.

28 Accordingly, applicant respectfully requests that the Examiner's rejection of Claim 50 be
29 withdrawn since the cited art does not teach or suggest all of its aspects. Since dependent claims
30 inherently include what is recited in the independent claim on which they depend, Claim 56 is

1 patentable over Bailey in view of Lacey for at least the same reasons as set forth above in connection
2 with Claim 50.

3 Patentability of Independent Claim 60

4 As amended, Claim 60 recites a **portable** trainer comprising:

5 (a) a housing defining a practice volume, the housing comprising a collapsible
6 frame, the frame defining a plurality of side openings facilitating access to the practice volume; and

7 Significantly, the cited art does not teach a portable trainer including a collapsible frame and a
8 video camera that can be disposed within the housing when the portable trainer is assembled. A
9 collapsible frame, also referred to as a pop-up trainer, is clearly shown in applicant's Figures. The
10 cited art does not teach or suggest the claimed combination, and there appears to be no basis for
11 modifying the cited art to achieve an equivalent, absent the impermissible application of hindsight.

12 Accordingly, applicant respectfully requests that the Examiner's rejection of Claim 60 be
13 withdrawn since the cited art does not teach or suggest all of its aspects.

14 Patentability of Independent Claim 61

15 As amended, Claim 61 recites:

16 (c) a support structure disposed within the practice volume, the support structure being
17 supported by a base of the housing, the digital video camera being coupled to and supported by the
18 support structure, the support structure enabling the digital video camera to be movably positioned
19 within the practice volume to change a position of the digital video camera so as to obtain an image
20 of a different portion of the practice volume, the support structure movably supporting the digital
21 video camera without substantially enveloping the digital video camera.

22 Significantly, the support structure to which the video camera is attached is inside of the
23 practice volume, enables the camera can be movably positioned, and is attached to a base of the
24 housing. This structure corresponds to applicant's FIGURES 6, 7A, 7B, and 7C. Lacey discloses
25 video cameras that are disposed in the housing but fixed in position. Lacey also discloses a video
26 camera attached to a distal end of a boom, such that the boom enables that video camera to be moved
27 within the practice volume. However, the selectively positionable video camera disclosed by Lacey
28 simply is not supported *by a base* of the housing. The boom disclosed by Lacey is supported by an
29 upper portion of the housing. Such a structure is not equivalent to the structure recited in applicant's
30 Claim 61 and illustrated in applicant's FIGURES 6, 7A, 7B, or 7C. Absent the impermissible

1 application of hindsight, there appears to be no justification for modifying Lacey's structure to
2 achieve an equivalent.

3 Accordingly, applicant respectfully requests that the Examiner's rejection of Claim 61, and
4 each dependent claim thereon, be withdrawn, since the cited art does not teach or suggest all of its
5 aspects.

6 Patentability of Dependent Claim 66

7 As amended, Claim 66 recites that the video endoscopic surgical trainer further comprises:

8 *a handle configured to simulate a handle of a laparoscope, an electrical conductor from the*
9 *digital video camera passing through the handle and extending to at least one of a display and a*
10 *processor configured to process images provided by the digital video camera.*

11 Clearly, Lacey's simulator includes electrical conductors that extend from the digital video
12 cameras to a display or processor. However, those electrical conductors do not pass through a handle
13 that simulates a handle of a laparoscope. As explained in applicant's specification, one feature of
14 applicant's technology is providing a trainer that realistically simulates a laparoscope. To enhance
15 the simulation, the electrical conductors from the video camera is passed through the simulated
16 laparoscope handle, to suggest that the images being displayed to the user during the simulation have
17 actually been acquired by a laparoscope, while no actual laparoscope is included within the trainer.
18 The cited art simply does not teach or suggest this aspect of applicant's technology, and absent the
19 impermissible application of hindsight, there appears to be no basis to modify the prior art to achieve
20 an equivalent.

21 Claim 66 distinguishes over the cited art for this additional reason.

22 Patentability of Independent Claim 75

23 As amended, Claim 75 recites the following:

24 (a) *a housing defining a practice volume and including an orifice disposed on an*
25 *upper surface of the housing;*

26 (b) *a digital image sensor disposed within the practice volume, the digital image*
27 *sensor producing a digital video signal conveying images of at least a portion of the practice volume;*
28 *and*

29 (c) *a support structure configured to support and position the digital image*
30 *sensor, such that a position of the digital image sensor can be changed to obtain an image of a*

different portion of the practice volume, a distal end of the support structure comprising a shaft configured to engage the orifice on the upper surface of the housing, the support structure further comprising an elongate member, the elongate member having a proximal end disposed outside of the practice volume, and a distal end disposed inside the practice volume, the digital image sensor being coupled with the distal end of the elongate member, such that manually changing a position of the proximal end of the elongate member results in a change in a position of the digital image sensor, the elongate member movably supporting the digital image sensor externally of the elongate member

In other words, the trainer defined by Claim 75 includes a housing in which an orifice is formed on an upper surface of the housing, and a support structure for a video camera, the support structure including a shaft that engages the orifice in the housing and an elongate extending into the housing to which the video camera is attached.

Lacey simply does not teach or suggest an equivalent structure. Once again, absent the impermissible application of hindsight, there appears to be no reason to modify Lacey to achieve an equivalent structure. Accordingly, applicant respectfully requests that the Examiner's rejection of Claim 75 be withdrawn, since the cited art does not teach or suggest all of its aspects.

Patentability of Independent Claim 88

Significant differences exist between the recited subject matter and the cited art because the cited art does not teach or suggest adjusting a first bracket and a second bracket in order to manipulate the boom as recited in step (d). The Examiner has asserted that Lacey discloses all of the steps of independent Claim 88. However, as amended, applicant has clarified that in order for the boom to be manipulated a first bracket and a second bracket must be adjusted. For example, as shown in FIGURE 4, mounting bracket 46 and mounting bracket 48 enable the boom to be manipulated. There is an adjustment handle in Lacey, but no disclosure that this adjustment handle includes two brackets that are adjustable in order to manipulate a boom. In addition, Lacey teaches away from manipulating two brackets since Lacey teaches adding additional cameras in order to improve viewing.

Accordingly, applicant respectfully requests that the Examiner's rejection of Claim 88 be withdrawn since the cited art does not teach or suggest all of its aspects. Since dependent claims inherently include what is recited in the independent claim on which they depend, Claim 90 is

1 patentable over Bailey in view of Lacey for at least the same reasons as set forth above in connection
2 with Claim 88.

3 Claims Rejected Under 35 U.S.C. § 103

4 The Examiner has rejected Claims 25, 26, 51-53, 63, 67, 68, 73, 74, 84, 85, 89, and 92 under
5 35 U.S.C. § 103(a) as being unpatentable over Lacey in view of Official Notice.

6 Claim 57 has been rejected under 35 U.S.C. § 103(a) as being unpatentable over Lacey.

7 Claim 70 has been rejected under 35 U.S.C. § 103(a) as being unpatentable over Lacey in
8 view of Day (GB Patent No. 2,338,582, hereinafter referred to as "Day").

9 Claims 59 and 71 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Lacey in
10 view of Hon (U.S. Patent No. 6,074,213, hereinafter referred to as Hon).

11 Claims 69, 78, 80, 86, and 91 are rejected under 35 U.S.C. § 103(a) as being unpatentable
12 over Lacey in view of Hasson (U.S. Patent No. 5,947,743, hereinafter referred to as Hasson).

13 However, these claims ultimately depend from independent Claims 24, 50, 60, 61, 75, and 88.
14 Since dependent claims inherently include what is recited in the independent claim on which they
15 depend, the above claims rejected under 35 U.S.C. § 103(a) are patentable over Lacey in view of the
16 various cited art for at least the same reasons as set forth above in connection with applicant's
17 traversal of the rejection of Claims 24, 50, 60, 61, 75, and 88.

18 Patentability of Dependent Claim 63

19 Claim 63 recites using either a ball head mount or a pan and tilt mount inside a video
20 endoscopic trainer to enable degrees of motion to be achieved for a video camera disposed inside
21 such a trainer. The Examiner has taken additional notice that such structures are known in the art.
22 However, it is well accepted that merely because two structures are known does not automatically
23 render a combination of those two known structures as being obvious.

24 In the context of the present invention, Lacey has disclosed a single structure that enables a
25 video camera disposed within a training volume to be selectively positioned (a boom). Applicant has
26 recited structurally distinguishable elements that also enable a video camera disposed within a
27 training volume to be selectively positioned. Absent the impermissible application of hindsight, there
28 appears to be no reason to modify Lacey to employ structurally distinguishable elements that achieve
29 a similar function. Claims 63 distinguishes over the cited art for this additional reason.

1 Patentability of Newly Added Claim 93

2 New Claim 93 recites a video trainer including:

- 3 (a) a housing defining a practice volume;
- 4 (b) a digital video camera disposed within the practice volume, the digital video
- 5 camera producing a digital video signal conveying images of at least a portion of the practice
- 6 volume;
- 7 (c) a handle configured to simulate a handle of a laparoscope, the handle
- 8 extending outwardly and away from the frame; and
- 9 (d) an electrical conductor extending from a distal end of the handle to the digital
- 10 video camera, and extending from a proximal end of the handle to least one of a display and a
- 11 processor configured to process images provided by the digital video camera.

12 As discussed above, while electrical conductors coupling a video camera to a

13 display/processor are known, the cited art does not teach or suggest a training simulator in which

14 such cables are routed through a simulated handle of a laparoscope, to enhance a realism of the

15 trainer.

16 In view of the Remarks set forth above, it will be apparent that the claims in this application define a

17 novel and non-obvious invention. The application is in condition for allowance and should be passed to

18 issue without further delay. Should any further questions remain, the Examiner is invited to telephone

19 applicant's attorney at the number listed below.

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